

REMARKS

The present Amendment is in response to the Examiner's Office Action mailed August 6, 2008. Claims 2, 6, and 34 are canceled and claims 1, 25, 28, 35, 36, 37 and 38 are amended. Claims 1, 3-5, 7-11, 25, and 27-38 are now pending in view of the above amendments.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicant requests that the Examiner carefully review any references discussed below to ensure that Applicant's understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

I. Examiner's Interview

Applicant expresses their appreciation to the Examiner for conducting a telephone interview with Applicants on September 3, 2008. The Examiner indicated that reciting a rotation axle in combination with other elements of the rejected claims might distinguish over *Miyasaka*. However, further search and analysis would be required. The Examiner indicated that claims 35 and 36 appeared to distinguish over the art of record.

II. Allowed Subject Matter

The Examiner has indicated that claim 35 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In response, Applicant has rewritten claim 35 in an independent format so as to include all of the limitations of its base claim. In particular, the scope of claim 35 has not been narrowed in any way so as to overcome any prior art, but has merely been rewritten in an independent format. As acknowledged by the Examiner, that claim is patentably distinct from the prior art, and is now in a condition for allowance.

III. REJECTION UNDER 35 U.S.C. §112

Claims 37 and 38 are rejected under 35 U.S.C. § as being indefinite. Applicant respectfully asserts that the frictional forces present in the disclosed embodiments are not “restorative” inasmuch as they in no way tend to restore anything to an original state. The frictional forces only resist movement. However, in order to expedite allowance of the application, claims 37 and 38 have been amended to recite that the phrase “without relying on an *elastic* restorative force.”

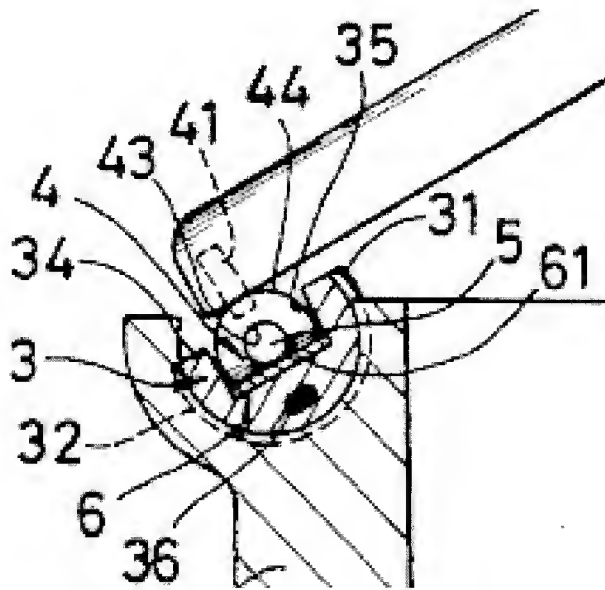
IV. CLAIM OBJECTIONS

Claim 36 is objected to for informalities. By this amendment claim 36 has been amended as suggested by the examiner.

V. PRIOR ART REJECTIONS

A. Rejection Under 35 U.S.C. §102(b)

The Examiner rejects claims 36 under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 5,210,906 to Aihara et al. (“*Aihara*”). Because *Aihara* does not teach or suggest each and every element of the rejected claims, Applicants respectfully traverse this rejection in view of the following remarks.



Aihara discloses a “double hinged device for a console box of an automobile.” Abstract. Each hinge of the double hinge device includes a connector 4 secured to an edge of the lid of the console box. The connector 4 includes “an inverted U-shaped connector main body 44 ... having an engaging semicircular groove 43.” Col. 4, lns. 37-39. The lid is coupled to the console box by positioning the lid such that a shaft 5 coupled to the box is positioned within the groove 43. Col. 4, lns. 46-53. The shaft 5 is mounted to a pivotal member 3 having a semicircular shape and positioned within grooves formed on the edges of the console box. Col. 4, lns. 16-26. The pivotal member 3 further includes an open end that is “indented to form a connecting edge 35 which faces squarely upward when the pivotal member 3 is left stationary.” Col. 4, lns. 22-24. A magnet positioned on the connecting edge 35 retains the connector 4 of the lid. Col. 4, lns. 57-64.

As is apparent from Figures 1 and 2, as the lid is rotated relative to the console box, the connector 4 and pivotal member 3 rotate in unison. Freedom to rotate is the result of the pivotal member 3 having a semicircular perimeter and being seated in a semicircular groove.

In contrast, claim 36 recites

- a housing;
- a joint axle attached to the housing;
- an upper body attached to the joint axle such that the position of the upper body relative to the housing is adjustable; and
- a hinge comprising:
 - a support shaft connected to the upper body;
 - a support block within which the support shaft is slidably received; and
 - a rotation axle attached to the support block and rotatably connected to the housing such that the support block is rotatable with respect to the housing such that pivoting of the upper body about the joint axle causes translational movement of the support shaft relative to the support block, [[the]] wherein the upper body is capable of being positioned at any of a range of angles relative to the housing due to a frictional relationship defined by the means for supporting and the support shaft.

The Examiner has characterized reference 32 as the joint axle, shaft 5 as the support shaft, the connector 4 as the support block, and pivotal member 3 as the rotation axle. However, reference 32 refers to one of “a pair of lateral engaging ridges 32, 33” forming part of the pivotal member 3. Col. 4, lns. 20-21. In other words, the reference 32 and the pivotal member 3 are a single axle. However, pivotal member 3 has also been characterized as the rotation axle.

Inasmuch as the pivotal member 3 and ridge 32 are a single axle, *Aihara* fails to disclose both a joint axle and a rotation axle as recited in claim 36.

The connectors 4 cannot be characterized as the support block inasmuch they are not connected to the same member that has been characterized as the rotation axle. Claim 1 recites that the “rotation axle [is] attached to the support block and rotatably connected to the housing.” However, if the pivotal member 3 is characterized as the rotation axle, then the connector 4 should be secured to the console box by means of the pivotal member 3. Instead, the connector 4 is fixed to the lid of the console box and is not rotatable. Col. 4, lns. 35-44 (“...each of said connectors 4, 4, has a flat fitting section 41 provided with a number of fitting bores 42 Said fitting section 41 can be rigidly held to the box lid 2 by means of screws 45.”).

Claim 36 has also been amended to recite that “the support block is rotatable with respect to the housing such that pivoting of the upper body about the joint axle causes translational movement of the support shaft relative to the support block.” The axle 5 has been characterized as the support shaft and the connector 4 as the support block. However, as is apparent in Figures 1 and 2 of *Aihara* rotation of the box lid 2 results in only rotation of the connector 4 relative to the axle, rather than “translational movement of [a] support shaft relative to [a] support block” as recited in claim 36.

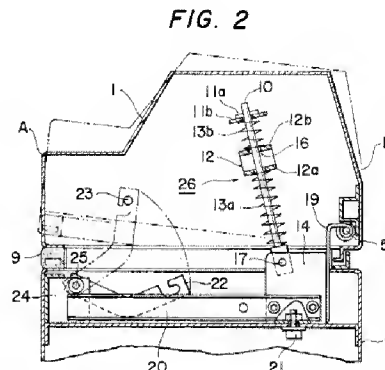
Claim 36 further recites that “the upper body is capable of being positioned at any of a range of angles relative to the housing due to a frictional relationship defined by the means for supporting and the support shaft.” Engagement of the connector 4, which has been characterized as the support block, with the shaft 5, which has been characterized as the support shaft, does not satisfy this element. When the connector 4 is engaged with the shaft 5, the pivotal member 3 is still able to pivot within its seat. Only friction at the interface of the pivotal member 3 with the console box can prevent its rotation. Any frictional relationship between the shaft 5 and connector 4 does not cause the lid of the console box to be “capable of being positioned at any of a range of angles relative to the housing due to a frictional relationship defined by the means for supporting and the support shaft” as recited in claim 36.

Since *Aihara* does not teach the device/method/apparatus being claimed in this application, Applicant respectfully requests that the rejection under 35 U.S.C. § 102(b) be withdrawn.

B. Rejection Under 35 U.S.C. § 103

The Examiner rejects claims 1-4, 7-8, 11, and 25-29 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,330,219 to Miyasaka et al. (*Miyasaka*).

Miyasaka discloses an apparatus for supporting the upper cover of a line printer. Inasmuch as the lid is heavy, a power assisting device is provided to facilitate lifting of the upper cover. In Figure 2 (right), a balance mechanism 26 is shown supporting an upper cover hood 1. The mechanism 26 includes a “balance mechanism guide 12 ... secured to an inner surface of a side wall of the cover hood 1 by welding or screws with a shaft 10 slidingly extending through a bore 16 formed in the guide 12. The shaft 10 has a bottom end pivotally secured to a balance mechanism holder 14 by means of a pin 17...” Col. 1, lns. 43-49.



“[A] lower spring 13a is disposed around the shaft 10 ... to normally urge the upper cover hood 1 upwardly.” Col. 1, lns. 54-58. Other mechanisms disclosed by *Miyasaka* for raising the upper cover hood 1 include “pneumatic or hydraulic cylinder devices and electrical power movers....” Col. 1, lns. 38-40.

In contrast, amended claim 1 recites, “a housing; an upper body rotatably connected to the housing via a joint axle; and a hinge comprising: a support shaft connected to the upper body; and a support block rotatably connected to the housing via a rotation axle, the support block defining a hole, the support shaft passing through the hole and capable of moving through the hole while a supporting force caused by friction between the support shaft and the support block generates a moment to the joint axle larger than a moment to the joint axle generated by a weight of the upper body such that the supporting force is substantially the same at any of a range of angles, wherein the upper body is capable of being statically positioned at any of the range of angles relative to the housing *due to friction between the support block and the support shaft.*”

The shaft 10 of *Miyasaka* passes through a guide 12 that the Examiner has characterized as the support block. However, the guide 12 is not “rotatably connected to [a] housing” as recited in claim 1. *Miyasaka* further fails to disclose that the guide 12 is connected to the upper cover hood 1 by means of a “rotation axle” as recited in the claim.

Furthermore, the guide 12 is not described as exerting frictional forces on the shaft 10 such that an “upper body is capable of being statically positioned at any of the range of angles relative to the housing due to friction between the support block and the support shaft,” as recited in claim 1. *Miyasaka* discloses the use of power assist devices in combination with a shaft 10 and guide 12. However, *Miyasaka* does not disclose that the guide 12 could be configured with respect to the shaft 12 as recited in the claim. Notwithstanding any assertion that a friction device may be equivalent to a power assist device, this equivalence does not provide any teaching or suggestion to design a support block exerting frictional forces on a support shaft as recited in the claim.

Miyasaka discloses the user of power assist devices that are used to raise a heavy upper cover hood 1. Col. 1, Ins. 33-37 (“As is well known, the upper cover hood 1 is relatively heavy, for example the cover has a weight of 7 to 8 kg for small printers and 20 to 30 kg for a large printer. Therefore, a power assisting device or balance mechanism is generally provided ...”). The device recited in claim 1 includes an upper body “capable of being statically positioned at any of the range of angles relative to the housing due to friction between the support block and the support shaft.” Frictional forces between a support shaft and a support block resist movement rather than providing assistance. The device of *Miyasaka* therefore teaches against modification to achieve the claimed invention.

The device disclosed in *Miyasaka* includes the use of a spring 13a positioned on the shaft 10 to urge the guide 12 upward. Springs exert a force equal to $k \times D$, where k is the spring constant and D is distance from an undeformed position. Accordingly, the force exerted by the spring 13a constantly changes with change in position of the guide 12 as the upper cover hood 1 is raised. Accordingly, the device of *Miyasaka* fails to disclose an apparatus wherein “a supporting force ... is substantially the same at any of a range of angles,” as recited in claim 1.

With respect to claim 25, for similar reasons, *Miyasaka* fails to teach or suggest, in combination with the other elements of claim 25, “means for supporting the support shaft in a sliding manner, said means for supporting interfacing with the housing, and said support shaft and means for supporting the support shaft generating a moment greater than a moment generated by a weight of the upper body, wherein the upper body is capable of being statically positioned at any of a range of angles relative to the housing due to a frictional relationship”

defined by the means for supporting and the support shaft; and a rotation axle rotatably connecting the means for supporting to the housing.”

With respect to claim 37, for similar reasons, *Miyasaka* fails to teach or suggest “a housing; an upper body rotatably connected to the housing; and a hinge comprising: a support shaft connected to the upper body; and a support block rotatably connected to the housing via a rotation axle, the support block defining a hole, the support shaft passing through the hole and capable of moving through the hole while a supporting force between the support shaft and the support block generates a moment to the joint axle larger than a moment to the joint axle generated by a weight of the upper body such that the supporting force is substantially the same at any of a range of angles, wherein the upper body is capable of being statically positioned at any of the range of angles relative to the housing without relying on an elastic restorative force applied to the hinge.

With respect to claim 38, for similar reasons, *Miyasaka* fails to teach or suggest “means for coupling an upper body to a housing, wherein said means for coupling comprises: a support shaft; means for connecting the support shaft to the upper body; and means for supporting the support shaft in a sliding manner, said means for supporting rotatably mounted to the housing via a rotation axle, and said support shaft and means for supporting the support shaft generating a moment greater than a moment generated by a weight of the upper body wherein the upper body is capable of being statically positioned at any of a range of angles relative to the housing without relying on an elastic restorative force applied to the means for coupling an upper body to a housing.”

The Examiner rejects claims 5, 10, and 30-31 under 35 U.S.C. § 103 as being unpatentable over *Miyasaka* in view of *Clements* (U.S. Patent No. 2,148,014). *Clements* has been cited as showing hinge which includes a block of Rubber. Applicant respectfully asserts that *Clements* fails to remedy the above noted deficiencies of *Miyasaka* with respect to claim 1 and 25 upon which claims 5, 10, and 30-31 depend, respectively. Claims 5, 10, and 30-31 are therefore allowable for at least the reasons noted above with respect to claims 1 and 25.

The Examiner rejects claims 9 and 32-33 under 35 U.S.C. § 103 as being unpatentable over *Miyasaka* in view of *Johnson et al.* (U.S. Patent No. 6,563,598). *Johnson* has been cited as showing a machine body housing a scanner or a multi-function peripheral. Applicant respectfully asserts that *Johnson* fails to remedy the above noted deficiencies of *Miyasaka* with

respect to claim 1 and 25 upon which claims 9 and 32-33 depend, respectively. Claims 9 and 32-33 are therefore allowable for at least the reasons noted above with respect to claims 1 and 25.

CONCLUSION

In view of the foregoing, Applicant believes the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

The Commissioner is hereby authorized to charge payment of any of the following fees that may be applicable to this communication, or credit any overpayment, to Deposit Account No. 23-3178: (1) any filing fees required under 37 CFR § 1.16; and/or (2) any patent application and reexamination processing fees under 37 CFR § 1.17.

Dated this 6th day of November, 2008.

Respectfully submitted,

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